

# PRINTERS & SCANNERS

## FAQ

**Q** How does a scanner's resolution affect scan quality, and how high a resolution should I look for?

**A** A scanner's resolution is measured in dots per inch (dpi), which refers literally to the number of points at which the scanner samples the image along one inch of the original document. A scanner with a 1,200x2,400dpi resolution can capture nearly three million pixels of information from a square inch, but the Epson Perfection V100 Photo reviewed on the right can record more than 10 times as much.

Capturing more detail isn't always necessary, however. Like many magazines, *Computer Shopper* is printed at 300dpi, so scanning pages at a much higher resolution will reveal little or no extra information. It's far more important to look for a scanner with high-quality optics that produce a sharp focus at any resolution. You're very unlikely to need resolutions above 600dpi for regular paper scans. If you plan to scan film, look for a minimum of 2,400dpi.

**Simon Handby**  
Printers and audio expert

simonh@computershopper.co.uk

## EPSON Perfection V100 Photo

★★★★★

£60 inc VAT

The Epson scanners we've reviewed in the past have all been conventionally arranged, with a lid that's hinged at the back and opens away from the user. The Perfection V100 Photo's lid is hinged at the right and opens from left to right. This means you need less space above the scanner to open the lid, but there's no other clear advantage. The V100 is squarer and less attractive than other recent Epson scanners, such as the Perfection 4490 Photo (see 'Also consider...').

Despite its unusual arrangement, this is a fairly conventional scanner. It has a high optical resolution of 3,200x9,600dpi and a built-in backlight for scanning film, so it's fairly well specified for the price. Epson supplies a reasonable software bundle that includes ABBYY FineReader optical character recognition (OCR) software and ArcSoft's PhotoImpression image-editing package. The setup program lets you choose which components to install and works fairly quickly. There's no head lock to release, so once you have installed the software you can connect the USB cable and begin.

The V100 uses the same TWAIN software as other Epson products. It's a particularly well-designed

interface with three modes suited to different levels of experience. Many users will end up selecting the Professional mode, which gives the highest level of control over scanning while still managing to be easy to use. It's a refreshing change from the frustrating interface supplied with HP's inkjet multifunction devices and scanners.

This scanner completed our timed tests reasonably quickly. With the scanning lamp already warm, a preview of an A4 document took 13.5 seconds to complete, and a



150 dots per inch (dpi) scan took 14 seconds. As we'd expect, it was slower at higher resolutions, taking 51.5 seconds to capture a 6x4in photograph at 1,200dpi. Loading film into the supplied adaptor is easy as it clearly marks the correct orientation, but the thin retaining clips in the slide film mounts look a little fragile. At 2,400dpi the V100 took one minute and nine seconds to scan a single 35mm frame.

Our plain paper documents were accurately exposed, with colours faithful to the originals. Photos seemed a little dark, but it's easy to correct this before committing to a final scan. Even at its default auto-exposure, the V100 preserved the full range of light and dark shades from a variety of originals.

A scanner needs sharp focus to make the most of a high optical resolution, but we felt that the V100's images were a little soft. This was most evident along regions of high contrast, such as black text on a white background, and was visible even at moderate resolutions. The driver's unsharp mask function, which is enabled by default, helped to improve the results, but they still weren't perfect.

Despite this limitation, the V100 is quick and produces much higher-quality images than most other affordable scanners.

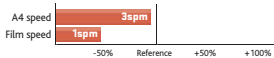
Simon Handby

### SUMMARY

- ✓ Quick and easy to use
- ✓ Generally good scan quality
- ✗ Slightly soft focus

**A4 FLATBED SCANNER** 3,200x9,600dpi  
optical resolution, 48-bit colour depth,  
USB Hi-Speed interface  
**PART CODE** B11B184072  
**SUPPLIER** www.amazon.co.uk  
**DETAILS** www.epson.co.uk

### PERFORMANCE (see page 54)



## Also consider...

### SAMSUNG ML-2510

★★★★★

£88 inc VAT



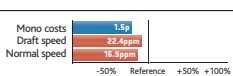
This grey laser printer may look a little drab, but

it's easy to set up and quick to install. It has a 250-sheet covered input tray and a single-sheet multipurpose feed slot, but it crumples envelopes.

The ML-2510 peaked at 22.7ppm when printing text, which is impressive for such an affordable printer. It's also cheap to run, with a cost per page of around 1.5p, yet produces high-quality text and mono graphics. It's a great compact budget mono laser.



**MONO LASER PRINTER**  
1,200x600dpi resolution, 24ppm maximum speed, parallel and USB Hi-Speed interfaces  
**PART CODE** ML-2510  
**SUPPLIER** www.misco.co.uk  
**DETAILS** www.samsung.co.uk  
✓ Fast; affordable to buy and run; good print quality  
**FULL REVIEW** Oct 2006



### DELL Multifunction Laser Printer 1815dn

★★★★★

£335 inc VAT

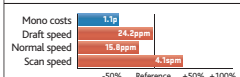


Dell's Multifunction Laser Printer 1815dn can scan in colour and make black-and-white prints and copies. It has a standard

network interface and can print on both sides of a sheet of paper automatically. It produces sharp scans, high-quality text documents and decent copies, though they can be a little too dark. It's fast, easy to use and cheap to run, so it's ideal for a busy office.



**MONO LASER MULTIFUNCTION PERIPHERAL**  
600x600dpi print resolution, 600x1,200dpi scan resolution, USB and 10/100 Ethernet interfaces  
**SUPPLIER** Dell 0879 075818  
**DETAILS** www.dell.co.uk  
✓ Fast; cheap to run  
✗ Dark PostScript prints  
**FULL REVIEW** Nov 2006



## KONICA MINOLTA Magicolor 2490MF

★★

£549 inc VAT

Konica Minolta's Magicolor 2490MF is similar to the 2480MF, reviewed in *What's New, Shopper* April 2006, but it's equipped with a wired network port and a fax modem as standard. Although it's big and fairly heavy, the 2490MF is comparatively compact for a colour laser multifunction peripheral (MFP).

Setting up this MFP is fairly involved. There's plenty of packing tape to remove before you can lift the scanner bed and manually release the scan-head lock. Two sheets of instructions are taped into place, along with a further two cards attached to internal shipping locks that you must remove. We wondered if we'd spotted all the packing material hiding in each of the MFP's nooks.

The setup program isn't particularly straightforward, either. It's fine if you want to connect the device over USB, but if you're



using the MFP's network port, you'll have to add and configure a suitable TCP/IP print port manually in Windows. Although the printer leased an IP address on our network, using the control panel menu to discover the address wasn't easy. Once we had added a port manually, the installation completed without problems.

Like many MFPs with a network port, the 2490MF has limited support for making scans over the network. You can use the control panel to send a scan by email, but you'll need to connect by USB to use a more conventional TWAIN interface to capture documents. Konica Minolta's software is basic, allowing scans of only 150, 300 or 600 dots per inch (dpi) and displaying a tiny preview image.

The quality of the 2490MF's scans was generally unimpressive. In photo scans, colours looked unnatural and suffered from significant banding. This is acceptable in an office-oriented device, but we saw a similar problem in our office document scans, along with a loss of contrast in light areas. Colour copies suffered from a similar loss of light detail, although for some reason mono copies exhibited the opposite problem, failing to preserve subtly different dark shades. A single colour copy took 36 seconds and a single

mono page 19 seconds, while copying a 10-page mono document took 57 seconds.

Fortunately, the 2490MF is a fairly competent colour laser printer, almost reaching Konica Minolta's claimed speeds on our print tests. Pages from our colour test had an even finish with accurate colours, while black text was crisp and dark. Our black-and-white test photo was also impressive, with good greyscale shading and no colour cast. Colour photos were overly warm, though, and suffered from a visibly coarse dither pattern in places.

The 2490MF is a little cheaper than some other fax-capable colour laser MFPs, such as our current Best Buy, Epson's AcuLaser CX11NF (see *What's New, Shopper* October 2005). It also has reasonable running costs and produces high-quality prints, but it's let down by a poor scanner. As a result, the quality of its document scans and photocopies is no match for the competition. We'd pay extra for the CX11NF.

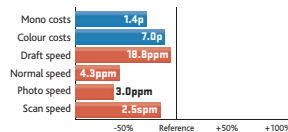
Simon Handby

### SUMMARY

- ✓ Reasonable running costs
- ✗ Unimpressive scans and copies
- ✗ Fiddly setup

**COLOUR LASER MFP** 600dpi print resolution, 20ppm mono/5ppm colour maximum speed, 600x600dpi scan resolution, USB Hi-Speed, PictBridge USB and 10/100 Ethernet interfaces  
PART CODE 5250226-200  
SUPPLIER [www.dabs.com](http://www.dabs.com)  
DETAILS [www.konicaminoltaprinters.co.uk](http://www.konicaminoltaprinters.co.uk)

### PERFORMANCE (see page 54)



▲ We don't expect perfect scans from an office MFP, but it should be able to capture regular text and images. This 300dpi scan should have an even finish, but it suffers from bands of lighter red

## EPSON Perfection 4490 Photo

★★★★

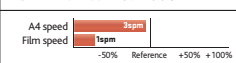
£125 inc VAT



Epson's Perfection 4490 Photo has a high optical resolution and comes with a decent software bundle. It can capture 35mm or 120mm medium format films, and has Kodak's Digital ICE dust reduction, though this didn't work well. Its focus is sharper than most flatbed scanners, and it produced great film scans. Its price has dropped since our original review, making it excellent value.

### FLATBED SCANNER

4,800x9,600dpi optical resolution, 48-bit colour depth, transparency adaptor, USB Hi-Speed interface  
PART CODE B11B176022  
SUPPLIER [www.amazon.co.uk](http://www.amazon.co.uk)  
DETAILS [www.epson.co.uk](http://www.epson.co.uk)  
✓ Excellent film scanner  
✗ Ineffective dust reduction  
FULL REVIEW Nov 2006



## KONICA MINOLTA Magicolor 5550

★★★★★

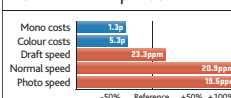
£749 inc VAT



This workgroup colour laser has a robust 120,000-page monthly duty cycle and supports PCL and PostScript. It's fairly easy to set up, but you need to clip on the multipurpose feed yourself. The 5550 was extremely quick when printing in colour, and produced excellent text, graphics and photo prints.

### COLOUR LASER PRINTER

600x600dpi resolution, 30ppm mono/25.6ppm colour maximum speed, parallel, USB Hi-Speed, PictBridge USB and 10/100 Ethernet interfaces.  
PART CODE A011021  
SUPPLIER [www.printerbase.co.uk](http://www.printerbase.co.uk)  
DETAILS [www.konicaminoltaprinters.co.uk](http://www.konicaminoltaprinters.co.uk)  
✓ Fast; excellent-quality prints  
✗ Quite expensive  
FULL REVIEW Apr 2007



## HP Photosmart D7160

★★★★★

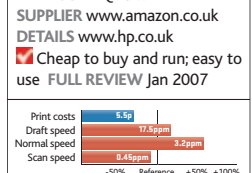
£81 inc VAT



HP's Photosmart D7160 costs less now than it did when it won our Best Buy award. It doesn't produce the best photo quality we've seen, but it's fast, affordable and easy to use. It's equally happy reeling off A4 pages of high-quality text or printing photos directly from a memory card.

We don't think it's worth paying extra for the touch-screen-equipped D7360 when the D7160 is this good.

**A4 PHOTO INKJET** Six-colour inkjet, 4,800x1,200dpi resolution, USB Hi-Speed and USB PictBridge interfaces  
PART CODE Q7047B  
SUPPLIER [www.amazon.co.uk](http://www.amazon.co.uk)  
DETAILS [www.hp.co.uk](http://www.hp.co.uk)  
✓ Cheap to buy and run; easy to use  
FULL REVIEW Jan 2007



## CANON Selphy CP720

★★★★

£59 inc VAT

Like the Selphy ES1 reviewed in *What's New, Shopper* April 2007, Canon's Selphy CP720 prints photos using dye-sublimation. In this process, the print head heats up a dye-impregnated ribbon, creating a coloured vapour that solidifies on the page. The process is faster than a typical inkjet, and because there are no ink droplets you can't see any grain in the results.

The CP720 is an attractive printer. It's very compact, but like most dye-sub, you need to allow some space behind it for the paper, which passes out through the back during printing. Each colour is laid down in turn, followed by a clear protective coat. It's fascinating to watch your photo taking shape as the printer works, but you won't have to wait long. The CP720 printed six photos from a PC in just six minutes and 15 seconds.

Canon sells bundles of paper and ink for this printer, available in packs of 36, 72 or 108. The largest pack costs around £22, so each print is about 20.3p. That's about average, but it's a few pence more than the most affordable compact inkjets or the best online photo-printing services.

Many users find it worth paying a small premium for the convenience of being able to print photos at home, and the CP720 is very easy to use. It has a regular PictBridge port for connecting a digital camera, but it also has an integrated cable on a reel that you can draw out and plug into a camera with a



Mini-B type USB socket. The front panel has a range of memory card slots, but as with many other Canon printers, you'll need an optional adaptor to read the contents of an xD card. The colour preview screen is small, but its image is just about good enough to let you select and print your favourite shots from an inserted card.

For a dedicated photo printer, the CP720's print quality is a little disappointing. Dark colours in our test prints were quite rich, helping to give prints good contrast, but bright, vivid colours such as the lights of a fairground were flat and underwhelming. In some of our prints we could also see a slight

marbling in regions of blue sky, a common dye-sub trait. The printer took seven minutes and 50 seconds to print six photos from an SD card.

Although the CP720 doesn't produce brilliant photos, it is fast, particularly when printing from a PC. It's very affordable, but Epson's PictureMate 240 (reviewed in *What's New, Shopper* February 2007) costs little more and produces better prints.

Simon Handby

### SUMMARY

- ✓ Fast, particularly printing from a PC
- ✓ Very affordable
- ✗ Photos are unimpressive

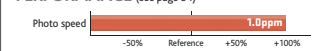
COMPACT PHOTO PRINTER 300x300dpi maximum resolution, USB and PictBridge USB interfaces

PART CODE 1291B008AA

SUPPLIER [www.misco.co.uk](http://www.misco.co.uk)

DETAILS [www.canon.co.uk](http://www.canon.co.uk)

### PERFORMANCE (see page 54)



## CHOOSING AN... Inkjet Printer

Follow the steps to find your ideal specs

PAGE SIZE: A4

QUOTED SPEED: 18ppm mono, 12ppm colour

PRICE PER PAGE: 4p mono, 8p colour

RESOLUTION: 1,200x4,800dpi

INK COLOURS: Four in two tanks

FEATURES:

Recommended minimum in grey

**1** You can get a decent inkjet for under £50. With the minimum spec shown above, high-quality printing is possible, but slow. The actual print speed of inkjets can be half the quoted (maximum) speed on text documents, and even slower when printing graphics. Budget inkjets such as these are designed only for light use and can be expensive to run.

**2** Spending £60 will get you a much more capable printer that is either faster and better built or better at reproducing photos. If your priority is documents, you'll want double the minimum speed and half the print costs of the sub-£50 printer. Look for inkjets that can handle all your office media, including envelopes and labels.

**3** If your priority is photos, speed is less important. Instead, choose a printer that can reproduce subtle tones well. Only hands-on testing, not specifications, will tell you this, so check our reviews. Borderless printing (right up to the edge of the paper) should also be possible. Pay particular attention to running costs: photos use three times as much ink as regular colour documents.

**4** Heavy-duty office inkjets can cost up to £1,000 and their build quality is improving. They use large, individually replaceable ink tanks which can cut running costs. Printers with automatic duplex (double-sided) printing or A3 capability are becoming more affordable.

**5** Pricier photo printers allow you to print digital photos by plugging memory cards straight into the printer – no PC is required. An LCD preview screen gives you more control over this. Many inkjet printers now have a PictBridge USB port, which can be used to print images directly from most digital cameras.

**6** If you're really serious about photography, consider buying an inkjet that can print up to A3+ without borders. The best produce prints nearly as good as those from a professional lab.

## Also consider...

### CANON PIXMA iP4300

★★★★★

£57 inc VAT



If you need a budget printer, Canon's PIXMA



iP4300 shows that you don't need to compromise on quality. It has two paper trays, and can print on coated CDs or both sides of each sheet of paper. It's fast to produce text, colour graphics and photos. Print quality is high, with no trace of grain, though photos are a little bit oversaturated. Best of all, it has very low running costs.

INKJET PRINTER Five-colour inkjet, 9,600x2,400dpi maximum resolution, USB and PictBridge USB interfaces

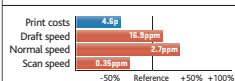
PART CODE 1438B008AA

SUPPLIER [www.amazon.co.uk](http://www.amazon.co.uk)

DETAILS [www.canon.co.uk](http://www.canon.co.uk)

✓ Inexpensive; fast; flexible; stylish; high-quality results

FULL REVIEW Dec 2006



### CANON PIXMA MP160

★★★★★

£40 inc VAT



The PIXMA MP160 costs less than many



budget inkjet printers, and it can also make good-quality scans and copies. It's compact and attractive and not too tricky to set up. Unusually for such an affordable printer, it has low running costs if you use Canon's high-capacity ink cartridges. It's great value if you just want a basic multifunction peripheral.

FOUR-COLOUR INKJET MFP 4,800x1,200dpi print resolution, 600x1,200dpi scan resolution, USB Hi-Speed and PictBridge USB interfaces

PART CODE 1447B008AA

SUPPLIER [www.amazon.co.uk](http://www.amazon.co.uk)

DETAILS [www.canon.co.uk](http://www.canon.co.uk)

✓ Affordable; good results

✗ No card reader

FULL REVIEW Jan 2007

